SSO's
Please call TWWTP to report a Sanitary Sewer Overflow or a backup: 919-544-8280

Notification:

This Performance Annual Report covering July 1, 2009 through June 30, 2010, was forwarded to the NC Department of Environment and Natural Resources. Public notice of the report was advertised in the Durham Herald Sun newspaper and is available for review at the following locations:

- Durham County Administrative Complex, Clerk's Office, 200 East Main St. Durham, NC
- Durham County Main Library
- Durham County South Regional Library
- Or, the Durham County web site:

www.co.durham.nc.us/ceng

Certification:
I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.

Joseph R. Pearce, P.E.
Utility Division Manager
Durham County Engineering Department—August 20, 2010

Pretreatment Program

The Triangle Wastewater Treatment Plant implements an Industrial Pretreatment Program (IPP) to control pollutants from industrial users which may pass-through or interfere with the Triangle Wastewater Treatment Plant's processes, which may contaminate sewage sludge, or potentially be hazardous to water health and safety. Currently there are thirty-three permitted industries that are regularly inspected and monitored to ensure their discharges meet specific permit limits. Sixteen of these industries are Significant Industrial Users. Durham County implements the IPP for the contributory users from the Town of Cary flow to the Triangle Wastewater Treatment Plant.

Clogged pipes can cause major problems!

"FOG"

Fats, Oils & Grease in Sewers Cause Sewer Spills !

Fats, **O**ils and **G**rease (**FOG**) come from cooking oil, shortening, lard, margarine, butter, dairy products and meat. Fat in food scraps causes problems when poured down the drain and clogs pipes in your home. Did you know FOG can also clog the sewer pipes under the streets that take the wastewater from your house to the treatment plant? As the grease builds up, the flow through the pipe is restricted and can cause sanitary sewer overflows (SSO).

This can allow untreated sewage to run into the streets and into our storm drains. This is not only a human health hazard but, since storm drains flow to creeks and rivers, this can cause significant environmental damage and impact aquatic life forms. You can avoid unnecessary expense and damage to the sewer system by following a few simple rules.

The following **Do's** and **Don'ts** will help you avoid expensive sewer backups, plumbing emergencies, rate increases needed to cover maintenance and repairs and help to protect water quality.

Do !

- Recycle used cooking oil or properly dispose of it by pouring it into a sealable container and placing the container in the trash.
- Put food scraps in the trash and not the sewer system.
- Use a "Dry Cleanup Method" by using a paper towel to scrape wet scraps from pots, pans and other cooking utensils into a can or trash for disposal.

× Don't ! ×

- Ever use cloth towels or rags to scrape plates or clean greasy dishware. When the towels are washed the grease will end up in the sewer.
- Ever pour fats, oils or grease into sink drains.
- Ever use a toilet as a wastebasket.

Facility / System Name:

Triangle Wastewater Treatment Plant
5926 NC Hwy. 55 East
Durham, NC 27713
919-544-8280

Applicable Permits:

Wastewater Treatment Plant
NC0026051

Collection System
WQCS00038

Stormwater
COCNCGI10054

Bulk Reclaimed Water
WQ0032821

Owned and Operated by:

Durham County Engineering Department
Utility Division

Phone: 919-544-8280
Fax: 919-544-8590

Contact:

Joseph R. Pearce
Utility Division Manager

Triangle Wastewater Treatment Plant
5926 NC Hwy. 55 East
Durham, NC 27713

919-544-8832

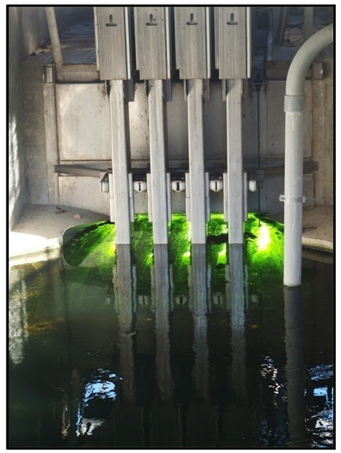
Durham County
Triangle Wastewater Treatment Plant
Performance Annual Report

July, 2009—June, 2010

Northeast Creek, Downstream From the Facility's Discharge
April, 2010

Purpose:

To keep citizens informed and to maintain compliance with State Requirements and the Clean Water Act of 1999 (House Bill 1160), Durham County has prepared this report summarizing the performance of the County-owned, operated and maintained Triangle Wastewater Treatment Plant (TWWTP) and associated wastewater collection system. This report includes activities during the County's fiscal year 2009-2010 (July 1, 2009 through June 30, 2010).



Ultraviolet Disinfection

System Overview

Who We Serve

The Durham County Wastewater collection and treatment system serves a customer base of more than 10,000 residential, commercial, and industrial users, including the Research Triangle Park. During the last year, the Triangle Wastewater Treatment Plant (TWWTP) treated an average of 5.16 million gallons per day (MGD) of wastewater. Included in this flow is wastewater from the Town of Cary, under an Interlocal Agreement between Durham County and the Town of Cary, to treat up to 6 MGD of the Town's wastewater through 2013.

Description of Collection System

The collection system consists of gravity sewer lines, pump stations, and forcemains to convey wastewater to the treatment plant. Durham County owns and maintains approximately 109 miles of sewer main with eleven pumping stations. All pump stations are equipped with telemetry that provides notification of alarm conditions.

Ten of the eleven stations have generators with automatic power transfer for emergency power during outages. The station without the automatic power transfer generator is currently served by a portable diesel pump and is scheduled to have a generator installed in the next fiscal year.

Also, currently underway is a complete manhole survey of our system. The approximately 2500 manholes are all being field surveyed with three-dimensional GPS coordinates. This data will be used in the future to accurately track manhole inventory, catalogue previous maintenance work and provide a basis to prioritize upcoming resource needs.

" 2,500 Manholes currently being field surveyed with 3D GPS coordinates "

Description of Treatment System

- ***Influent Pump Station*** - sized for 12 MGD average flow, and located above the 100 year flood elevation to avoid flooding.
- ***Fine Screens*** - removes large materials prior to the beginning of the treatment process.
- ***Grit Removal*** - removes small dense inorganic materials prior to the beginning of the treatment process.
- ***Five Stage Biological Nutrient Removal System*** - provides the ability to biologically remove nitrogen and phosphorous during treatment with carbon source addition.
- ***Chemical Polishing*** - sodium aluminate is used to remove additional phosphorus from water by chemical precipitation.
- ***Clarifiers*** - quiescent zone where biomass is separated from treated water.
- ***Tertiary Filters*** - filtering to remove additional biomass.
- ***Ultraviolet Disinfection*** - disinfection process without harmful by-products.
- ***Reaeration*** - supplemental dissolved oxygen provided prior to discharge.

Collection System Performance

Maintenance Activities

Durham County has a multi-faceted collections system maintenance program which includes sewer cleaning, manhole inspections, easement maintenance and priority line inspections. The following chart lists the spills and overflows from July 2009 through June 2010.

Location	Date	Volume Discharged (gallons)	Volume to Surface Water (gallons)	Cause	Remedy
Page Park	12-27-2009	4,000	2,250	Grease and construction debris	Removed grease and debris, pumped creek and disinfected area
Central Park	3-19-2010	100	100	Operator Error	Additional training and improved operating procedures

Treatment System Performance & Effluent Quality Graphs

The TWWTP discharge was compliant in all sampling events for the past year, while treating 1,880,902,000 gallons of wastewater.